Appendix 1 - Corps Special Public Notice for the Letter of Permission Procedures

Appendix 2 - Corps Special Public Notice for the Regional General Permit

Appendix 3 - Department's Watershed Streambed Alteration Agreement Templates and Streambed Alteration Agreement Templates Master Conditions List for San Diego Creek Watershed

Appendix 4 – Land-Use Practices in Upland Areas of Influence Affect Aquatic Resource Conditions

One goal of the SAMP, including the Strategic Mitigation Plan and Mitigation Coordination Program, is to increase the public and regulated community's awareness about the Watershed's aquatic resources, particularly the riparian ecosystem, and emphasize the need for landowners/managers to maintain and enhance the functions and processes of the Watershed's remaining moderate- to high-integrity aquatic resource. As previously described, the aquatic resource integrity areas are comprised of moderate- to high-integrity aquatic resources and their upland areas of influence, represented as a drainage basin or local drainage area (i.e., the subwatershed unit of land that drains to a particular stream reach through surface flows). Land use practices conducted in the uplands can affect the condition of the aquatic resources: such upland areas directly contribute overland flows into the riparian reach, thereby affecting the hydrologic, water quality, and habitat integrity of the receiving aquatic resources. The identified aquatic resource integrity areas vary by landowner/manager and in the types of existing and planned land uses.

Since a range of direct and indirect impacts to aquatic resources may result from activities in the adjacent upland areas of influence, the Corps and the Department recommend that landowners/managers of properties in the aquatic resource integrity areas bear in mind that their land use activities in adjacent upland areas of influence affect the health and function of the aquatic resources. For example, the transformation of natural/open space land uses to land uses with increased impervious surfaces in the local drainage and drainage basins adversely affect the aquatic resources through altered hydrology and pollutant loads. Activities in terrestrial habitats may also affect the life cycles of aquatic and semi-aquatic species through habitat removal. In the aquatic resource integrity areas, conservation of the upland areas of influence, through the establishment or expansion of existing upland habitat reserves, should be a priority. A complementary approach is to implement sustainable land use practices throughout the Watershed. One innovative resource specifically developed for the local residents and businesses within the Watershed is the W*atershed Design Guidelines for the San Diego Creek and Upper Newport Bay* prepared for the County of Orange, California by the Studio 606 graduate students in the Department of Landscape Architecture at the California State Polytechnic University, Pomona (2004).

The identification of a property as being within the aquatic resource integrity areas does not mandate any direct change in how that property will be managed by the landowner/manager. Regardless of whether a property within the aquatic resource integrity areas is currently being managed for resource protection (i.e., a permitted compensatory mitigation site, or for multiple purposes, such as a regional park), the landowner/manager would continue to manage the property. Regulated activities in jurisdictional aquatic resources would still require authorizations from the regulatory agencies, but the Corps and Department would apply the SAMP Analytical Framework and SAMP regulatory procedures.

The conservation guidelines for landowners/managers and local land use authorities were described in the Strategic Mitigation Plan as management actions to minimize adverse direct and indirect impacts to aquatic resources (Table 4-7). In addition, to complement the SAMP Analytical Framework further discussion is provided below regarding existing uses and land management considerations for the regulated community. The information is an indication of issues the Corps and the Department will consider when reviewing applications for regulated activities in jurisdictional areas within the aquatic resource integrity areas.

As for non-regulatory situations, unless adopted and required by local land use authorities, the conservation recommendations provided herein may be viewed as "helpful tips" for voluntary implementation. The conservation recommendations focus on the connections between riparian communities and adjacent terrestrial or upland resources in order to maintain the interactions between these communities, and to assure long-term conservation of aquatic and semi-aquatic species dependent on the riparian, transitional, and adjacent terrestrial habitats at some point during their life cycles.

Management of Specific Existing Use Areas in Aquatic Resource Integrity Areas

In developing a comprehensive approach to support aquatic resource conservation within an urbanizing watershed, the Corps and the Department recognize that the maintenance and operation needs of existing facilities are often perceived as competing with the conservation of aquatic resources. Under the proposed SAMP, the balance of maintenance and operational needs with aquatic resource conservation concerns is intended. The following discussion provides both a summary of existing uses, including flood management, parks and golf courses, reservoirs, recreational uses, landfills, and designated open space areas, and overlays existing management strategies with those proposed as part of the Mitigation Coordination Program.

Designated Open Space Areas – The lands within the aquatic resource integrity areas that are located outside the NCCP Reserve System also include other designated open space areas not previously mentioned. For instance, the City of Irvine Preserve, the San Joaquin Marsh, and previous mitigation sites with conservation easements (e.g., Needlegrass Creek) are among the other existing designated open space areas. These areas would be expected to have similar management needs as the NCCP Reserve System lands, but with added adaptive management needs associated with environmental stressors common to lands in close proximity with human activities. As described in "Parks and Golf Courses," below, landowners/managers may wish to develop new, or revise existing environmental management programs to incorporate pesticide reduction initiatives, water conservation methods, habitat and wildlife inventories, site assessments, and user education/outreach. As described under "Public Access and Recreational Uses," the preparation of maintenance plan(s) by the land manager(s) is encouraged. In addition, land manager(s) may need to address recreation-related disturbances to streambed and native riparian habitat to minimize potential impacts to the aquatic resources and riparian species of concern. With a Mitigation Coordination Program and/or a third-party mitigation

program in place, funding and management efforts could be coordinated amongst landowners/managers.

Flood Management – Existing use areas for flood management likely would not require additional management responsibilities. Of the 1,025 acres of aquatic resources identified as the aquatic resource integrity areas located outside the boundaries of the NCCP Reserve System, existing use areas for flood management occupy approximately 119 acres. Under existing conditions, these areas are maintained as flood management facilities per regular maintenance cycles to prevent overgrowth of vegetation. Consequently, their customary uses may inhibit future restoration as natural riparian and wetland systems. Nevertheless, aquatic resource integrity areas included flood management lands because of their adjacency to existing open space areas and for their strategic restoration value, should local policies and conditions change to allow ecosystem restoration to occur. However, in recognition of their existing use, as long as the work is restricted to existing maintenance activities and no change in the vegetation communities occurs, future routine maintenance activities would be allowed by the LOP procedures and WSAAs. In contrast, flood capacity improvement projects within the aquatic resource integrity areas or within the mainstem channels would be evaluated in the context of the SAMP Analytical Framework and permitting program, which for the Corps would mean a SIP process and for the Department, a conventional SAA process.

Landfill Operations – General information concerning ongoing activities or expansions at the only remaining operational landfill in the study area, i.e., Frank R. Bowerman Landfill along Bee Canyon, or project-level maintenance needs at the closed landfills, was provided to the Corps and the Department, but not in sufficient detail at the time of the SAMP formulation stage to be included as a specific activity for the SAMP process. However, subsequently the Corps and Department authorized jurisdictional impacts associated with a master development expansion. Further, routine maintenance activities affecting aquatic resources are planned and it is likely such routine maintenance resulting in minor impacts to jurisdictional waters would be eligible for LOP procedures and WSAAs. Any proposed expansion or remediation activities affecting aquatic resources would be evaluated under a Standard Individual Permit and conventional Streambed Alteration Agreement and in consideration of the additional information about the conservation values of the aquatic resources that was ascertained through the SAMP development process. With regards to land use effects on aquatic resources, the assumption herein is that natural and near natural areas provided upon a landfill's closure or associated with an active landfill can be actively managed in a manner to maintain the conservation values of nearby aquatic resources in the aquatic resource integrity areas. Review of management strategies may be appropriate to increase long-term conservation of aquatic resources.

Parks and Golf Courses – Of the 1,644 acres of aquatic resources identified within the aquatic resource integrity areas, existing use areas for parks and golf courses occupy about 47 acres of aquatic resources. These areas are used for the purpose of active recreation such as golf courses and active-use parks and were identified within the aquatic resource integrity areas because most of the parks allow for the growth of riparian and wetland habitats. Although existing uses

are expected to continue, impacts and new conversion of the aquatic resources to other uses should be avoided. Further, areas surrounding the aquatic resources are typically vegetated by a monoculture of mowed grasses and are intensively managed through mowing and the application of synthetic fertilizers, herbicides, and pesticides. Therefore, it is expected that landowners/managers of existing parks and golf courses could provide added benefit to aquatic resources by revising their present management regimes to include measures to minimize the organic and inorganic pollutant loading into the aquatic resources. Additionally, because invasive, exotic animals and plants have greater likelihood of establishing in disturbed areas, control of invasive species need to be addressed through proactive eradication programs. Landowners/managers may wish to develop new, or revise existing environmental management programs to incorporate updated best management practices, surface water management, herbicide/pesticide reduction initiatives, turf grass management, integrated pest management, water conservation methods, habitat and wildlife inventories, site assessments, and user education/outreach. Examples of best management practices, pollution prevention strategies, and impact reduction measures that could be implemented on park and golf course lands include the use of less toxic substitutes for malathion, 2,4-D and quintozene; soil conditioning using organic-based fertilizers and microbes; replanting areas with native and drought tolerant plant species; planting or retaining naturalized areas; and designating no-spray zones. An effective Mitigation Coordination Program and/or third-party mitigation program would provide an opportunity to share information and decrease adaptive management costs.

Public Access and Recreational Activities – Related to "Parks and Golf Courses" are the issues of public access and active use of recreational facilities. Identification of an area as within the aquatic resource integrity areas would not preclude the operation of existing recreational uses and trail systems. Minor activities related to the maintenance of existing facilities that would directly affect aquatic resources (e.g., culvert maintenance) would be reviewed by the permitting agencies for eligibility under the SAMP permitting process for eligibility for LOP procedures and the WSAA Process. In terms of management of aquatic resources, recreational activities including, but not limited to, horseback riding, biking, hunting, or fishing may impair or interfere with the conservation values and the natural condition of aquatic resource integrity areas if recreation-related causes of streambed and habitat disturbance are not controlled. The preparation of maintenance plan(s) by the land manager(s) is encouraged. Additionally, it is anticipated that through a Mitigation Coordination Program and/or third-party mitigation program, landowners/managers would become engaged in efforts to minimize potential impacts to the aquatic resources and the associated riparian species and to enhance and restore degraded riparian ecosystems.

Reservoirs/Water Supply and Wastewater Facilities – Of the 1,644 acres of aquatic resources identified within the aquatic resource integrity areas, existing use areas for reservoirs occupy about 81 acres. The reservoirs, used for the purpose of temporary water storage, were identified within the aquatic resource integrity areas based on the presence of fringe wetland and riparian habitats that often serve as exceptional habitat for wildlife. Impacts to aquatic

resources should be restricted to those for the purposes maintaining water storage and distribution. Routine regulated maintenance activities needed to retain storage capacity may qualify for permitting under the LOP procedures and the WSAA Process. As described above under "Parks and Golf Courses," landowners/managers may wish to develop new, or revise existing environmental management programs to incorporate pesticide reduction initiatives, water conservation methods, habitat and wildlife inventories, and site assessments. A Mitigation Coordination Program or third-party mitigation program would facilitate the coordination of long-term management efforts.

Appendix 5 – An Opportunity for Implementing a Mitigation Coordination Program within the Context of Watershed Management

The Mitigation Coordination Program is only one facet of watershed management. Figures A-1 and A-2 depict two similar ways of potentially integrating Mitigation Coordination Program into the broader ongoing watershed management efforts. The example is given with NROC as third-party mitigation sponsor and/or administrator of the Mitigation Coordination Program or the role of coordinator for resource management efforts within the NCCP study area. The following information is provided to complement the Watershed Management Plan (Corps, 2005b) and to inform local efforts to improve coordination efforts among local stakeholders.

Either before or after a decision is made as to which, if any, entity will become the Mitigation Coordination Program administrator, it is recommended the County of Orange (Watershed and Coastal Resources Division) host a meeting with all interested landowners/managers within the Watershed to discuss common goals, interests, and opportunities for working together. The County would be the appropriate agency to facilitate this workshop because it would directly support their Newport Bay Watershed Management Plan, Drainage Area Management Plan, TMDL compliance, Water Quality Strategic Plan efforts, and the Central Orange County Watershed Management Agency. A workshop will help inform the discussion of how an integrated watershed management program should operate, who is interested in what kind of program, what would be most useful to local landowners/managers, and so on. A workshop could also foster opportunities for cost sharing, coordination of existing efforts, program partnering, outsourcing, and the like, to minimize the expense to each landowner/manager associated with running an integrated watershed management program.

Several entities collect and maintain water resources data within the Watershed. Data management is one of the largest expenses in land management. Therefore, perhaps through a subcommittee of the Orange County Watershed Management Agency data managers could convene a summit where all of the entities that collect water resources data can discuss opportunities for collaboration, common needs or problems, cost sharing/savings opportunities, and creating improved analytical capabilities by working together. The Mitigation Coordination Program administrator or representative(s) from the Mitigation Coordination Committee should participate to the extent that data management tools are established for Watershed analysis, which will create the capacity for science-based ecosystem restoration and adaptive management decisionmaking. Data management will also influence the operational cost for the Mitigation Coordination Program administrator. Ongoing within the Watershed are a number of efforts to increase data sharing capabilities, such as the Natural Resource Conservation Services' grant to University of California San Diego and University of California Agricultural and Natural Resources Extension Center to compile GIS data, the US Army Corps of Engineer's Newport Bay Watershed Management Study, and the University of California Irvine's California Sustainable Wetland Information Manager (CalSWIM) effort, and WRP's IWRAP.

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Appendix 6 – Alternate Models for a Mitigation Coordination Program and Third-Party Mitigation Program Sponsor

Management Options Considered for Administrator of Mitigation Coordination Program and/or Sponsor of a Third-Party Mitigation Program

The Corps and the Department conducted an iterative review of different management options to achieve a coordinated approach to long-term management and restoration of the aquatic resources within the aquatic resource integrity areas. Various models for an organizational structure and an administrative role exist, and several models are under consideration and presented herein.

One concept considered is where NROC would either take on the role of third-party mitigation program sponsor or as an interim conservation fund account administrator (Figure A-1). NROC was formed as a non-profit corporation in 1996 to manage the NCCP Reserve System. Pursuant to the NCCP 75-year term implementing agreement each landowner/manager party to NROC is responsible for conducting activities on its own property in a manner consistent with the implementing agreement, with NROC as the overseeing body (NROC, 1996). Although the NCCP Reserve System does not cover the entirety of the aquatic resource integrity areas, NROC's purview involves the larger NCCP Planning Area, which encompasses the entire SAMP Study Area.

In consideration of NROC, over 619 acres of the aquatic resources within the aquatic resource integrity areas are located within the boundaries of the NCCP Reserve System and NROC provides an existing framework from which to draw and expand to cover aquatic resource protection. However, NROC was established to administer a terrestrial habitat protection program. An expanded role would require some structural and financial adjustments to their organization. However, to date no follow-up meetings with the NROC Board of Directors have occurred and such meetings would be necessary to discuss whether NROC is interested in pursuing an expanded role in the Watershed to include aquatic resource management activities in the aquatic resource integrity areas. In addition to internal organizational changes that would be needed, mechanisms (e.g., staff resources, funding) are not in place to address aquatic resources and the specific needs for maintaining and restoring their functions. As would be the case with the other options for third-party mitigation program sponsors and Mitigation Coordination Program management models, adequate funding for the additional roles and responsibilities, including aquatic resources management and the expanded geographic areas of activity would be required, but are anticipated to be less than the funding requirements of new entities not already operating in the Watershed.

Another possible land management organization active in the Watershed that could participate in the coordination of ecosystem and watershed management efforts is the Irvine

Ranch Conservancy, which was established in 2005 as a California non-profit organization. The Irvine Ranch Conservancy actively manages over 50,000 acres of permanently protected natural and near natural lands within portions of this and neighboring watersheds to support public recreational access and environmental stewardship referred to as the Irvine Ranch wildlands and parks. Many of the lands overlap with the NCCP Reserve and the aquatic resource integrity areas.

Several other options besides the local NROC and Irvine Ranch Conservancy models were considered. Nevertheless, a separate Mitigation Coordination Program administrator may not be needed if a third-party mitigation program sponsor assumes many of the roles and responsibilities. However, if an administrator is selected, the organization should be able to be grantee of any conservation easements, and landowner or manager of any lands acquired for preservation.

Use an Experienced Land Manager

One approach to managing conservation lands within the aquatic resource integrity areas considered is to contract the services of an established, not-for-profit organization experienced in conservation ecology and resource management in Southern California that specializes in aquatic resources and/or terrestrial reserves. A Mitigation Coordination Program administrator could contract the services of a conservation land manager to establish and administer a conservation program similar to the typical resource reserve models, whereby the management, responsibility, and even landownership of conservation lands is consolidated under one reserve manager (Figure A-2).

The key advantage of this approach is that an established organization, which specializes in conservation and reserve management, would have a single and exclusive mandate, i.e., aquatic resource conservation. Further, such an entity would have the prior experience and expertise to help establish and operate a new Mitigation Coordination Program and any new third-party mitigation program or mitigation bank, if appropriate, and coordinate with existing or future such banks without considerable administration by the Coordination Committee. Consequently, the Center for Natural Lands Management (CNLM) and The Nature Conservancy (TNC), active conservation land managers in the region, were contacted for preliminary discussions to obtain information about their services and to gauge interest on the behalf these organizations. Although other organizations may be interested in the role of aquatic resource manager, the disadvantages to selecting an entirely entity new entity to the Watershed would be the delays associated with becoming familiar with the ongoing activities within the Watershed, and an increased potential for duplicative efforts and additional coordination with other ongoing conservation efforts in overlapping areas such as those by NROC.

However, since this Watershed has various landowners/managers with existing responsibilities for easements and dedications obligated through City, County, and NCCP

requirements, i.e., land dedications, entitlements, etc., the landowners/managers generally implement their own management programs on their lands. Consequently, the strict ecosystem reserve model with one manager responsible for day-to-day management activities appears less suitable for this urbanizing Watershed with ongoing terrestrial conservation programs, than a more flexible model such as the NROC model would be.

City of Irvine as Administrator

Under the second management strategy considered, the City of Irvine would serve as the Mitigation Coordination Program administrator reporting to the Coordination Committee (Figure A-3). This model assumes a separate entity would function as a third-party mitigation program sponsor. The primary consideration supporting the selection of the City of Irvine is that over 75% of the sites identified as aquatic resource integrity areas lay within the City of Irvine's corporate limits. Furthermore, the City manages open space areas within the City's purview, including lands identified within the aquatic resource integrity areas.

In consideration of the disadvantages of having the City serve as Mitigation Coordination Program administrator, three issues are foremost. First is the City would be required to serve both as an administrator and participating land manager under the same Mitigation Coordination Program, which is a situation that could appear to be a conflict of interest. The second issue is that the City, like all municipalities, has many mandates in its responsibility to serve its local public, one of which is to preserve and protect the open space in its trust. The Corps and the Department believe the selected Program administrator should have only one primary mandate concerning the aquatic resource integrity areas, which is conservation of the natural resources. Finally, the administrator would be required to administer this Program throughout the Watershed and beyond the geographical limitations of any one city. This would require the City of Irvine to be responsible for the parts of the aquatic resource integrity areas that are outside city limits and its typical jurisdictional boundaries.

Anticipated Roles of Mitigation Coordination Program Administrator

If it is determined that an administrator is needed, the prospective administrator would draft any necessary implementation and management agreements, including a project management plan that addresses financial considerations, for approval by the Coordination Committee. The administrator would implement the Mitigation Coordination Program as defined in the SAMP and Program EIS/EIR. The responsibilities of a Mitigation Coordination Program administrator could include, but may not be limited to the following duties:

- Serving as Grantee, Conservation Easement Owner, or Third-Party Beneficiary for any conservation easements enacted upon lands within the aquatic resource integrity areas;
- Coordinating any land dedication and/or acquisition of lands for preservation within the aquatic resource integrity areas;
- Overseeing and/or implementing site-specific restoration and enhancement activities in the aquatic resource integrity areas, in conformity with the SAMP, including the Strategic Mitigation Plan and Mitigation Coordination Program, and/or as agreed to in any implementation agreement;
- Establishing and administering a mitigation bank or other third-party mitigation program, if appropriate and as approved by the Corps and the Department, and/or coordinating with existing or future operators of approved mitigation bank(s)/other third-party mitigation program(s) within the SAMP study area;
- Monitoring and managing the aquatic resource integrity areas in accordance with the Strategic Mitigation Plan and Mitigation Coordination Program for the conservation of the aquatic resources in perpetuity;
- Coordinating with other Watershed conservation organizations (e.g. Watershed Management Committee and NROC) as practicable to help increase effectiveness of conservation efforts and reduce redundancy;
- Conducting any pubic outreach and education about the Program and the conservation values of the resources that would be determined to be necessary for the successful implementation of the Program;
- Submitting annual reports[1] to the Coordination Committee, and attending no less than one meeting or field tour with the Coordination Committee per year;
- Submitting records for periodic audits by the Coordination Committee or its designee; and
- Applying for and administrating grant funds, bond funds, and other funds from non-mitigation sources for restoration activities.

Since many of the aquatic resources in the aquatic resource integrity areas overlap with the NCCP Reserve System (Tables 2-3 and A-1), a Program administrator would be responsible for coordinating with NROC, which represents state and federal resource agencies, county and city governments, and local landowners/managers. Additionally, the Program

[1] The Mitigation Coordination Program annual report should include the following components: (1) preparation of a specific management program/budget for the following year; (2) updates of prior budgets and ongoing funding recommendations and priorities; (3) a discussion of activities undertaken by the administrator and participating stakeholders; (4) the amount and location of impacts to Corps and the Department's jurisdiction in the Watershed; (5) restoration and enhancement actions; (6) an accounting of all funds received and disbursed to participating agencies for management and acquisition activities related to the Program; (7) an accounting of lands added to the aquatic resource integrity areas; (8) recommended modifications to management policies and programs of the Program.

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administrator should coordinate with any other local landowners and managers responsible for land management in overlapping upland areas of the aquatic resource integrity areas.

Business Plan

Implementation of a long-term, sustainable and coordinated aquatic resources management program such as the Mitigation Coordination Program involves financial planning. Unless planned, in-perpetuity management of aquatic resource integrity areas could result in unforeseen and excessive capital costs, which may prohibit any long-term sustainability of the aquatic resource integrity areas or the program. The optimal scenario is to establish a mechanism for anticipating the management needs for the Mitigation Coordination Program and an administrator. Realistic expectations of operational costs and sufficient monies to fund the annual stewardship costs, as adjusted for inflation are important considerations.

If a Mitigation Coordination Program administrator is preferred, then a next step could be to develop a business plan. A third-party mitigation program sponsor or Mitigation Coordination Program administrator would need to prepare a full PAR, or use a similar method to determine their funding needs. A business plan would provide a detailed account of what is needed to make such a program administrator viable. With the operational information, a prospective administrator would be able to make a more informed decision as to their interest. If an administrator is not identified, this business plan would be instrumental in developing alternative strategies for creating a less formalized Mitigation Coordination Program.

In consideration of the broader Watershed management activities, the Corps and the Department acknowledge there could be two phases to the development of a business plan. First, a short-term business plan is recommended; it should entail the basics of setting up a Mitigation Coordination Program, including the activities of a mitigation bank or other third-party mitigation program sponsor. Second, a long-term business plan should be developed that analyzes the activities of a "Watershed Foundation"-type group, as presented in the Corps' Newport Bay Watershed Management Plan (2005b), for the long-term management of the aquatic resources of the Newport Bay Watershed. The latter is a more extensive level of watershed management and beyond the scope of the SAMP, but is important to the SAMP and the aquatic resource integrity areas because watershed management aims to balance the social, environmental, and economic parameters of the whole Watershed community.

Appendix 7 – Mitigation Coordination Program Long-Term Management Costs and Funding Sources

Landowners/managers may opt to coordinate their separate on-going or future long-term management activities through the Mitigation Coordination Program. Considering an endowment is usually established to fund long-term management of terrestrial habitat conservation areas, it is reasonable to suggest that an endowment would be appropriate for long-term management of conservation lands, preferably those identified as aquatic resource integrity areas. Used in this context, "aquatic resource conservation areas" would include compensatory mitigation sites, both preservation and restoration sites, and voluntarily offered conservation areas within aquatic resources integrity areas.

Estimates of funding sources needed to support an in-perpetuity aquatic resource management program depend on the projected activities and associated costs to manage the aquatic resource integrity areas. The following basic assumptions should be considered when developing cost estimates:

- The highest quality riparian and wetland habitats typically require less active management than lower quality habitats;
- When the existing natural processes are left intact and unnatural disturbances are kept to a minimum, management may focus on monitoring and minimizing anthropogenic disturbances; and
- Moderate natural disturbances are needed for the dynamic riparian ecosystems. Once a natural disturbance has taken place, normal processes would allow equilibrium to be re-established over time and extensive management would not be needed.

For example, the aquatic resource integrity areas located within the NCCP Reserve System boundaries involve the highest quality riparian and wetland habitats, the extent of which is described in Tables 2-3 and A-1. An analysis of the acreage of riparian habitat within each subbasin (Table A-1), including the percentage of high integrity riparian habitat, provides a basis for estimating the potential needs and level of costs for managing the aquatic resource integrity areas.

Another issue to consider is the wide range of potential costs for restoration projects. Therefore, we recommend long-term management activities are provided for under a separate fund or endowment than funds to be used for restoration projects that improve degraded sites. Restoration projects should be addressed primarily through traditional compensatory mitigation requirements for permitted impacts by landowners, and/or through obtaining project-specific grants for restoration. However, over time, a Mitigation Coordination Program administrator or third-party mitigation program sponsor may opt to coordinate such restoration activities within the identified aquatic resource integrity areas to

support the implementation of the SAMP Strategic Mitigation Plan. Alternatively, an approved mitigation bank may be established for a site with restoration needs.

Table A-1. Baseline riparian habitat in the aquatic resource integrity areas overlapping with the NCCP Reserve System, presented by subbasins and the percentage of riparian areas of high quality.

Subbasin	Riparian Habitat Total Area (acres)	Percent High Integrity	Percent Medium and High Integrity
Agua Chinon	158.8	90	100
Bee Canyon	39.4	72	85
Borrego Canyon	113.4	83	100
Bommer Canyon	35.5	89	93
Bonita Canyon	64.8	7	60
Central Irvine Channel	1.1	0	9
Hicks Canyon	19.0	96	96
Laguna Canyon	5.3	86	86
Marshburn Channel	0.4	70	100
Peters Canyon	14.8	0	6
Rattlesnake Canyon	5.1	56	74
San Diego Creek	21.9	0	0
San Joaquin Channel	1.1	46	100
Sand Canyon	6.6	88	98
Serrano Creek	88.8	100	100
Shady Canyon	19.7	100	100
Grand Total	**596**	**74**	**88**

Nevertheless, the mitigation bank and/or other third-party mitigation program sponsor will need to develop and update annually the fee charged on a per acre basis to establish the non-wasting endowment to cover the cost of aquatic resource monitoring and management in perpetuity, as well as to plan and implement enhancement and restoration projects. The fee is also to cover the cost of administering the third-party mitigation program, including but not limited to, staffing, wages, benefits, funds management expenses, rent, equipment and supplies, and other overhead expenses. The amount sufficient to establish an endowment and the associated fee schedule should be determined by the sponsor utilizing an accepted method for calculating an endowment, such as PAR (CNLM, 1998).

To achieve a non-wasting endowment, a portion of the earning must be applied to the principal endowment to address inflation, thereby maintaining the purchasing power of the endowment over time. Fund management must be able to differentiate between short-term funding needs, i.e., annual operational needs, versus the long-term investment strategy. Further, it is possible that during a down turn in the financial markets or the general

economy adequate funds may not be generated by the endowment or other sources to implement all the monitoring and management activities in the aquatic resource integrity areas. If this occurs, the sponsor will need to coordinate with the landowners/managers participating in the Mitigation Coordination Program to prioritize the monitoring and management activities conducted in the aquatic resource integrity areas until funding levels return to projected operational amounts.

Property Analysis Record (PAR)

Quantifying the costs of in-perpetuity management of aquatic resource conservation areas within the aquatic resource integrity areas, particularly the mitigation project areas, are complex and depend on several factors: the type of land and resources to be protected, the objective of conservation, and the specific maintenance needs within any given year. In an effort to represent the many variables of the Program in projecting potential costs, the Corps went through the exercise of preparing a preliminary list of potential activities and tasks and conducted a preliminary, first-order cost estimate using the PAR, a tool developed by the CNLM (1998) and endorsed by EPA. The PAR method uses information about site conditions, natural communities, conservation management tasks, timing and frequency of tasks, administrative costs, and existing requirements over the property that may affect the subject property. PAR enables the analysis of these multiple parameters to estimate the management tasks and funding requirements. PAR also distinguishes between initial and capital costs and the ongoing management costs for in-perpetuity conservation.

Preparation of a first-order estimate of cost was intended to serve as the basis for initial planning long-term cost projections and potential financing strategies, including endowments, fees related to compensatory mitigation, and other monetary sources. However, due to the variability in costs, which is dependent on the prioritized activities and other factors, the preliminary PAR was not completed. In consideration of a phased implementation approach, it is recognized that the Coordination Committee may need to prioritize lands according to the type of property, including landowner cooperation, and the level of management required, i.e., a preservation site would be expected to have less needs and lower costs than a enhancement site. Therefore, site-specific and program-specific information must be collected and management decisions made to conduct a realistic PAR. The third-party mitigation sponsor or Mitigation Coordination Program administrator would need to prepare a more detailed and accurate analysis of costs, including inflation and market cost, to provide long-term management for the aquatic resource integrity areas.

Potential Funding Sources

Although a business plan would provide a detailed analysis of the funding sources and related issues, we identified several potential funding mechanisms, some related, and others unrelated to the regulatory process, to sustain the long-term implementation and operation

of a coordinated long-term aquatic resource management program as part of the Mitigation Coordination Program.

Endowment

One funding strategy under consideration is an approach whereby an endowment would be established with acreage equivalent mitigation fees from permittees as a component of compensatory mitigation required to offset any authorized project impacts to aquatic resources. To ensure no net loss of function or acreage of jurisdictional waters, the Corps and/or the Department often require compensatory mitigation of permittees to offset the permanent, temporal, and temporary loss of aquatic resources at a mitigation ratio greater than 1:1 (mitigation to impact). As described in the SAMP mitigation framework, it is proposed that permittees would satisfy the no net loss policy through creation or restoration at a ratio of 1:1 for permanent impacts. For the remaining portion of compensatory mitigation, an endowment could be established through the payment of fees associated with any mitigation required above 1:1. An endowment would enable a Mitigation Coordination Program administrator or third-party mitigation program sponsor to be contracted to initiate the management activities prescribed as part of Strategic Mitigation Plan. Subsequent to the preparation of a detailed estimate of costs, where specific tasks and funding needs are identified, monies for an endowment could be secured.

Grants and Other Sources

Additionally, it is anticipated that a Mitigation Coordination Program administrator could compete for and obtain non-regulatory monies to acquire conservation lands, conduct public education and outreach activities, and/or conduct specific non-mitigation, restoration activities within the aquatic resource integrity areas. Funding sources may include, but are not limited to existing and future grant programs, federal, state, and local watershed restoration funding, bond monies, or conservation fees collected by local land use authorities. Additionally, ecosystem restoration projects determined by the Corps to have federal interest may be eligible for receiving federal monies administered by the Corps. The Corps Newport Bay Watershed Management Plan (2005b) identifies a number of revenue-generation strategies that could be adopted by a Program administrator.

Cooperative Efforts with Stakeholders

Lastly, existing and future efforts by other Watershed stakeholders to conduct Watershed-wide management activities may provide funding mechanisms to accomplish long-term management not specifically identified herein. Since a collaborative approach to the conservation of Watershed resources is encouraged under the Strategic Mitigation Plan and through the Mitigation Coordination Program, the management activities and funding mechanisms proposed within the context of the SAMP are intended to complement other ongoing and future efforts. The Coordination Committee and any selected administrator

would evaluate subsequent information about other reliable funding mechanisms and determine whether participation is appropriate.